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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/505,182	08/18/2004	Michael Haubmann	52131/DBP/M521	3710

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CHRISTIE, PARKER & HALE, LLP  
PO BOX 7068  
PASADENA, CA 91109-7068

EXAMINER
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BUI PHO, PASCAL M

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 09/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

1/8 3/11

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/505,182	HAUBMANN, MICHAEL	
	<b>Examiner</b>	<b>Art Unit</b>	
	Pascal M. Bui-Pho	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 5-34 is/are rejected.
- 7) ☒ Claim(s) 2-4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 August 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>14 Jan 05 &amp; 18 Aug 04</u> .                               | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This Office action is responsive to Preliminary Amendments filed on 06 December 2004.

Presently, claims 1-34 are pending.

#### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the sine and cosine signal of claim 4 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the Examiner, the applicant will

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be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Objections***

3. Claims 1, 2, 5, 10, 12, 13, 25, and 26 are objected to because of the following informalities:

**With regards to claims 1 and 13**, recite the limitation “the difference” in line 14 and line 19, respectively, “the difference” should be changed to --a difference--.

**With regards to claim 2**, on line 8, “8” should be changed to --\*--. Furthermore, also on line 8, a clear and concise equation including parentheses to clarify the order of operation should be included.

**With regards to claim 5**, on line 11, a clear and concise equation, including parentheses to clarify an order of operation should be included.

**With regards to claim 10**, on line 7, “the mechanical locking or unlocking” should be changed to --a mechanical locking or unlocking--.

**With regards to claims 12 and 26**, all instances of the word “contactless” and/or “contactlessly” should be replaced with an appropriate and valid term of the English language.

**With regards to claim 13**, on lines 1 and 2, “the shutter opening angle” should be changed to --a shutter opening angle--.

**With regards to claim 25**, on lines 5 and 6, “processor which is connected the output” should be changed to --processor which is connected to the output--.

Appropriate correction is required.

4. **Claim 18** is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only and/or cannot depend from any other multiple dependent claim(s). See MPEP § 608.01(n). Accordingly, the claim has not been further treated on the merits.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. **Claims 5 and 23-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

**With regards to claim 5**, on line 11, a clear relationship between the equations  $\alpha = [Z_{BF} - Z_{VF} + K] * [360^\circ/n]$  and  $O = I_{BF} - I_{VF} + K$  is lacking.

**With regards to claim 23**, in lines 3-7, the claim language is unclear as to how the shutter adjustment vane position regulating device is connected.

**Claims 24-30** are also rejected under 35 U.S.C. 112, second paragraph, because they inherit the indefiniteness from the claim they depend upon.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 7, 9-13, 19, 20, 22, and 31-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Dang et al. (US 5,850,277).

**With regards to claim 1**, Dang et al. disclose in Figs 1-11 a method for detecting a shutter opening angle of an adjustable rotating shutter (110, 120) mounted in a film camera (5) which comprises of a circular segment or circular sector shaped shutter vane (110) driven through a shutter shaft (140) by a shutter motor (144), and a shutter adjustment vane (120) mounted coaxial with the shutter vane and adjustable relative thereto by means of a shutter adjustment vane motor (164), the method comprising: detecting the position of shutter vane and the shutter adjustment vane during rotation of the rotatable shutter (Column 4, lines 30-47); and ascertaining the difference between the two positions as a value, said value being representative of the shutter opening angle of the rotatable shutter (generally depicted in Figs. 9 and 10).

**With regards to claim 13**, Dang et al. disclose in Figs. 1-11 a device (100) for detecting a shutter opening angle of an adjustable rotatable shutter (110, 120) mounted in a film camera (5) which comprises a circular segment or circular sector shaped shutter vane (110) driven through a shutter shaft (140) by a shutter motor (144), and a shutter adjustment vane (120) mounted coaxial with the shutter vane and adjustable relative thereto by means of a shutter adjustment vane motor (164), the device comprising: a first sensor (148) coupled to the shutter vane for sensing a position of the shutter vane and emitting a shutter vane position signal; a second sensor (168) coupled to the shutter adjustment vane and emitting a shutter adjustment vane position signal; and a position counter (170) receiving the shutter vane and the shutter adjustment vane position signals and ascertaining a difference between the shutter vane position signal and the shutter

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adjustment vane position signal (generally depicted in Figs. 9 and 10; Column 3, line 41 – Column 5, line 19).

**With regards to claim 7**, Dang et al. disclose a method wherein the shutter opening angle value is supplied as an actual value to a shutter adjustment vane position regulating device (170), wherein an ideal value of the shutter opening angle is manually input, wherein the difference between the ideal and actual value of the shutter opening angle is a setting variable for the shutter adjustment vane motor (Column 5, lines 9-19).

**With regards to claim 9**, Dang et al. disclose a method wherein a mechanical locking or unlocking of the shutter adjustment vane (120) is determined by scanning at a predetermined frequency and wherein when the shutter adjustment vane is mechanically blocked, a control of the shutter adjustment vane motor (164) is blocked (Column 4, line 59 – Column 5, line 5). It is herein considered that signals generated by encoder (168) determine locking positions of said shutter adjustment vane whose motor is controlled by processor (170).

**With regards to claim 10**, Dang et al. disclose a method wherein the position of the shutter vane (110), the position of the shutter adjustment vane (120), the value of the shutter opening angle of the adjustable rotatable shutter and the signals relating to a mechanical locking or unlocking of the shutter adjustment vane, that is, determining whether to adjust the shutter or not, are processed by a control logic (170).

**With regards to claim 11**, Dang et al. disclose a method wherein the control logic (170) inherently initializes the detected positions, one of ordinary skill in the art would recognize that an initialization step (i.e. giving a detected position an abstract value) is performed prior to recording a real detected position.

**With regards to claim 12**, Dang et al. disclose a method wherein a setting value for the shutter adjustment vane motor (160) is transferred without directly touching a shutter adjustment vane position regulating device (170).

**With regards to claim 19**, Dang et al. disclose a device wherein the first and second sensors (148, 168) are incremental angle measuring instruments comprising photoelectric scanning capability.

**With regards to claim 20**, Dang et al. disclose a device further comprising: a control logic (170) receiving a signal relating to the difference between the shutter vane position signal and the shutter adjustment vane position signal, wherein the control logic is connected to an interface (176, 178) on a control of the film camera; and a shutter adjustment vane position regulating device (also part of control logic) which receives on an input side a signal relating the difference of the shutter vane position signal and the shutter adjustment vane position signal, and an ideal value (input by user) through an interface for the shutter adjustment vane or for the shutter opening angle of the adjustable rotatable shutter, wherein said shutter adjustment vane position regulating device outputs from an output side a setting variable for the shutter adjustment vane motor (Column 5, lines 9-19).

**With regards to claim 22**, herein considered to be dependent upon claim 20, Dang et al. disclose a device wherein the control logic (170) is connected on an input side to a scanning device (168) for detecting mechanical locking of the shutter adjustment vane (120), wherein the control logic block the control of the shutter adjustment vane motor (164) when mechanical locking of the shutter adjustment vane is detected.



**With regards to claim 31**, Dang et al. disclose a device wherein a shutter adjustment vane position regulating device (170) controls the shutter adjustment vane motor (164) through a motor end stage (172) and a rotational connection (160).

**With regards to claim 32**, Dang et al. disclose a device wherein the first and second sensors (148, 168) are coupled to the shutter shaft (140) and to a shutter adjustment vane shaft (160).

**With regards to claim 33**, Dang et al. disclose a device wherein the shutter shaft (140) is connected to a shutter drive (144) through gearing (generally depicted in Fig. 4).

**With regards to claim 34**, Dang et al. disclose a device wherein the shutter adjustment vane (120) is connected to the shutter adjustment vane motor (164) through a shutter adjustment vane shaft (160) and a gearing within the shutter shaft (generally depicted in Fig. 4).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 6, 8, 14-17, 21-24, 26, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dang et al. (US 5,850,277) in view of Ishizuka et al. (US 5,129,725).

**With regards to claim 6**, Dang et al. disclose in Figs. 1-11 a method for detecting a shutter opening angle comprising, among other steps, determining a position of a shutter vane (110) and a shutter adjustment vane (120). Dang et al. however remain silent with regards to determining absolute positions of the shutter vane and the shutter adjustment vane from distance-

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coded reference marks. In analogous encoding art, Ishizuka et al. disclose in Figs. 1-14 a method for detecting an absolute position of a disc (1) from distance-coded reference marks (1A-1C). At the time of the invention, it would have been obvious to one of ordinary skill in the art to utilize a known-available method to measure angular displacement, as taught by Ishizuka et al., in order to output more accurate results.

**With regards to claim 8**, Dang et al. disclose a method for detecting a shutter opening angle comprising, among other steps, determining a position of a shutter vane (110) and a shutter adjustment vane (120); ascertaining a difference between said positions (generally depicted in Figs. 9 and 10). Dang et al. however remain silent with regards to an interpolation step. In an analogous encoding art, Ishizuka et al. disclose a method for detecting an absolute position of a disc (1) wherein angular positions are interpolated (Column 17, lines 23-39; Column 18, lines 33-46). At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Dang et al. by including an interpolation step, as taught by Ishizuka et al., in order to provide more reliable output results.

**With regards to claims 14 and 15**, Dang et al. disclose a device for detecting a shutter opening angle comprising angle measuring instruments with several code tracks mounted on a graduated plate (Column 4, line 66 – Column 5, line 5) and scanning devices (148, 168) assigned to the code tracks. Dang et al. however remain silent with regards to a device measuring absolute angle. In an analogous encoding art, Ishizuka et al. disclose a device for detecting a displacement angle comprising an absolute encoder to measure an absolute angle (Summary; Column 5, lines 7-9). At the time of the invention, it would have been obvious to one of

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ordinary skill in the art to modify Dang et al. by measuring absolute angles, as taught by Ishizuka et al., in order to provide more precise position results.

**With regards to claims 16 and 17**, Dang et al. disclose a device comprising a first and second sensor (148, 168) comprising incremental angle measuring instruments with a periodic incremental track mounted on a graduated plate (Column 4, line 59 – Column 5, line 5) with scanning devices (encoders) associated with the incremental track, but lack a clear inclusion of a reference mark track which has at least one reference mark fixing an absolute position of the graduated plate. In an analogous encoding art, Ishizuka et al. disclose a device comprising a reference mark track (1B, 1C) which has distance-coded reference marks, defined with variable spacing, fixing an absolute position of a graduated plate (1). At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Dang et al. by incorporating reference marks, as taught by Ishizuka et al, in order to provide more precise position results.

**With regards to claim 21**, Dang et al. disclose a device comprising a safety scanning device (168) for detecting the opening angle of the adjustable rotatable shutter (120), wherein an output of said safety scanning device is connected to a control logic (170) for issuing values of the shutter opening angle of the adjustable rotatable shutter. Dang et al. however remain silent with regards to said control logic issuing absolute values. In an analogous encoding art, Ishizuka et al. disclose a device comprising a control logic (2A-2C) for issuing absolute angular values. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Dang et al. by having a control logic issuing absolute angular values, as taught by Ishizuka et al., in order to provide more precise position results.

**With regards to claim 22**, presently considered to be dependent upon claim 21, Dang et al. disclose a device wherein the control logic (170) is connected on an input side to a scanning device (168) for detecting mechanical locking of the shutter adjustment vane (120), wherein the control logic block the control of the shutter adjustment vane motor (164) when mechanical locking of the shutter adjustment vane is detected.

**With regards to claims 23 and 24**, per the Examiner's understanding, Dang et al. disclose a device wherein a shutter adjustment vane position regulating device (170) is connected through an amplifier (172) and a signal transfer device (148, 168, 170) for controlling the shutter adjustment vane motor (164). Dang et al. however lack a clear inclusion of an energy transfer device. In an analogous encoding art, Ishizuka et al. disclose a device comprising an energy transfer device (6) and a signal transfer device (2A-2C) to output angular positioning. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Dang et al. by utilizing an energy transfer device, as taught by Ishizuka et al., in order to provide more reliable sensing results.

**With regards to claim 26**, herein considered to be dependent upon claim 23 or 24, Ishizuka et al. further disclose a device wherein said energy transfer device (6) generates a signal (output of encoder based on light transferred) for the transfer of said signal.

**With regards to claim 28**, Dang et al. disclose a device comprising a signal transfer device (148, 168, 170) for bi-directional signal exchange (signal from processor to motor and signal from encoder to processor), but lacks a clear specification of said device comprising an optical transmitter and an optical receptor. In an analogous encoding art, Ishizuka et al. disclose a device comprising a signal transfer device comprising an optical transmitter (6) and an optical

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receptor (2A-2C) for bi-directional signal exchange. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Dang et al. by utilizing an optical transmitter/receptor, as taught by Ishizuka et al., in order to provide more reliable sensing results.

11. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dang et al. (US 5,850,277) in view of Ishizuka et al. (US 5,129,725), further in view of Coberley (US 3,812,351).

**With regards to claim 29**, Dang et al. and Ishizuka et al. disclose in Figs. 1-11 (Dang et al.) a device for detecting a shutter opening angle comprising a signal transfer device (148, 168, 170) for bi-directional signal exchange, but lack a clear inclusion of said device further comprising an inductive signal transfer device. In an analogous encoding art, Coberley discloses in Fig. 5 a rotary position detector comprising, among other features, an inductive signal transfer device (Column 5, lines 33-50). At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Dang et al. and Ishizuka et al. by incorporating an inductive signal transfer device, as taught by Coberley, in order to provide a more efficient and compact design.

***Allowable Subject Matter***

12. Claims 2-4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior arts of record fail to anticipate and/or render obvious, either solely and/or in

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combination, a method for detecting a shutter opening angle, comprising, among other steps, detecting an absolute position of a shutter vane and an absolute position of a shutter adjustment vane with a resolution of  $n$  steps during one revolution of a rotatable shutter, wherein when a value of opening angle  $\alpha$  is less than  $0^\circ$ , the value is increased by  $360^\circ$  as long as the resulting value is greater than or equal to  $0^\circ$  or when the value of angle  $\alpha$  is greater than or equal to  $360^\circ$  the value is reduced by  $360^\circ$  as long as the resulting value is less than  $360^\circ$  (**Claim 2**).

### ***Conclusion***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pascal M. Bui-Pho whose telephone number is (571) 272-2714.

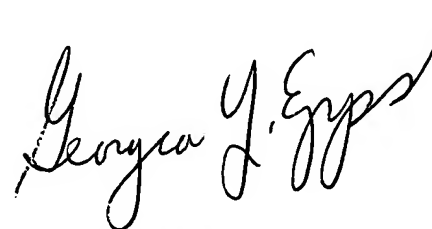
The examiner can normally be reached on Monday through Friday: 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Pascal M. Bui-Pho  
Examiner, Art Unit 2878  
12 September 2006

A handwritten signature in black ink, appearing to read "Georgia Epps", with a stylized, cursive script.

Georgia Epps  
Supervisory Patent Examiner  
Technology Center 2800